AMENDMENTS TO THE CLAIMS:

Please amend claims 1, 3, 4, 11, 23, 25, 27 and 28 as follows.

This listing of claims will replace all prior versions, and listings, of claims in the

application:

1. (currently amended) A data processing apparatus for controlling cross-triggering of

diagnostic processes on a plurality of processing devices, said data processing apparatus

comprising:

a routing module comprising a plurality of broadcast channels, one or more of said

broadcast channels being operable to indicate the occurrence of a diagnostic event on one or

more of said plurality of processing devices and having at least one ~~outer~~router input port for

receiving channel-mapped data indicating the occurrence of diagnostic events and at least one

router output port for broadcasting channelised information indicating the occurrence of

diagnostic events;

a mapping module having:

an event mapping input port operable to receive a diagnostic event signal indicating the

occurrence of a diagnostic event on an associated processing device,

said associated processing device being one of said plurality of processing devices;

a first mapping unit operable to programmably assert said diagnostic event signal to one

or more of said plurality of broadcast channels of said routing module and to supply said ~~first~~

~~mapped~~diagnostic event signal to said at least one router input port;

a channel mapping input port operable to receive from said router output port said

channelised information ~~comprising data from one or more of said plurality of broadcast~~

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~~channels indicating occurrences of diagnostic events on processing devices of said plurality of~~

~~processing devices~~; and

a second mapping ~~module~~unit operable to receive said channelised information from said

at least one router output port and ~~25~~to programmably retrieve from said channelised

information, diagnostic event data from selected ones of said plurality of broadcast channels and

to supply said retrieved diagnostic event data to said associated processing device to facilitate

triggering of a diagnostic process on said associated processing device in dependence upon said

retrieved diagnostic event data.

2. (original) An apparatus as claimed in claim 1, wherein said routing module comprises

combining logic for said one or more of said plurality of broadcast channels, said combining

logic being operable to combine a plurality of diagnostic event signals from different ones of

said plurality of processing devices asserted to a respective broadcast channel.

3. (currently amended) An apparatus as claimed in claim ~~1~~2, wherein said combining

logic comprises an OR logic gate.

4. (currently amended) An apparatus as claimed in claim 1, wherein at least one of said

router module and said mapping module comprises synchronisation logic operable to

synchronise a ~~10~~received signal to a local clock domain.

5. (original) An apparatus as claimed in claim 10, wherein said synchronisation logic has

a bypass mode.

6. (previously presented) An apparatus as claimed in claim 1, wherein at least one of said routing module and said mapping module belong to a transmitting device and destination device pair and comprises handshaking logic operable to hold assertion of a signal transmitted by said transmitting device pending receipt of an acknowledgement by said destination device.

7. (original) An apparatus as claimed in claim 6, wherein said handshaking logic has a bypass mode.

8. (original) An apparatus as claimed in claim 1, wherein said plurality of processing devices, and said data processing apparatus are components of a single microchip.

9. (previously presented) An apparatus as claimed in claim 1, wherein said mapping module and said associated processing device are situated on a different chip from said routing module.

10. (original) An apparatus as claimed in claim 1, comprising a routing module synchroniser interface operable to monitor both a first handshake signal sequence comprising receipt and acknowledgement of said channelised information and a second handshake signal sequence comprising receipt and acknowledgement of said diagnostic event signal, said routing module synchroniser interface being further operable to output a single off-chip signal representing said first handshake signal sequence and a single off-chip signal representing said second handshake signal sequence.

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11. (currently amended) An apparatus as claimed in claim 1, wherein said mapping

module comprises glitch-removal logic operable to register receipt of said diagnostic event signal

prior to supplying said diagnostic event signal to said ~~first mapping~~routing module thereby

preventing said routing module from falsely signalling occurrence of a diagnostic event.

12. (original) An apparatus as claimed in claim 1, wherein at least one of said first

mapping module and said second mapping module comprises a plurality of configuration

registers operable to effect said progammable assertion of said diagnostic event signal to said

plurality of said broadcast channels and/or to effect said progammable retrieval of said

diagnostic event data from selected ones of said plurality of broadcast channels.

13. (original) An apparatus as claimed in claim 12, wherein said configuration registers

are

programmable using memory mapped access.

14. (original) An apparatus as claimed in claim 12, wherein said configuration registers

are programmable using JTAG scan access.

15. (original) An apparatus as claimed in claim 11, wherein a first subset of said

configuration registers are programmable using JTAG scan access as well as memory mapped

access and a second subset of said configuration registers are programmable using memory

mapped access.

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16. (original)   An apparatus as claimed in claim 12, comprising an application trigger

generator operable to generate an application trigger signal simulating the occurrence of a

diagnostic event on at least one of said broadcast channels.

17. (original)   An apparatus as claimed in claim 16 comprising an application trigger

register operable to programmably assert said application trigger signal to one or more of said

broadcast channels.

18. (original)   An apparatus as claimed in claim 16, in which said application trigger

signal comprises channel mapping information.

19. (original)   An apparatus as claimed in claim 1, wherein at least one of said plurality

of processing devices is a processor core.

20. (original)   An apparatus as claimed in claim 1, wherein at least one of said plurality

of processing devices is a co-processor.

21. (original)   An apparatus as claimed in claim 1, wherein at least one of said plurality

of processing devices is a digital signal processor.

22. (original)   An apparatus as claimed in claim 1, wherein said routing module is

operable to be connected to a further routing module by connecting said at least one router output

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port of said router module to a router input port of said further routing module and connecting said at least one router input port of said routing module to a router output port of said further routing module.

23. (currently amended) An apparatus as claimed in claim 1, in which said routing module and said mapping ~~module~~module are components of an integrated device.

24. (original) An apparatus as claimed in claim 1 comprising a further mapping module connected to said routing module to form a cross-trigger block unit, the routing module having at least one expansion port operable to connect said cross-trigger block unit to a further respective cross-trigger block unit.

25. (currently amended) A data processing method for controlling cross-triggering of diagnostic processes on a plurality of processing devices, said method comprising the steps of:

broadcasting data indicating the occurance of diagnostic events via a router output port of a routing module comprising a plurality of broadcast channels, one or more of said broadcast channels being operable to indicate the occurance of a diagnostic event on one or more of said plurality of processing devices;

receiving at a router input port of said routing module, channel-mapped data indicating the occurrence of diagnostic events;

broadcasting from at least one router output port of said routing module, channelised information indicating the occurrence of diagnostic events on processing devices of said plurality of processing devices;

receiving via an event mapping input port of a mapping module a diagnostic event signal indicating the occurrence of a diagnostic event on an associated processing device, said associated processing device being one of said plurality of processing devices;

performing a first mapping operation involving programmably asserting said diagnostic event signal to one or more of said plurality of broadcast channels using said router input port;

~~broadcasting data indicating the occurrence of diagnostic events via a router output port;~~

~~indicating the occurrence of a diagnostic event on one or more of said plurality of processing devices on one or more of a plurality of broadcast channels;~~

~~receiving channel-mapped data indicating the occurrence of diagnostic events via a router input port;~~

receiving <u>at a channel mapping input port of said mapping module</u>~~from said router output port~~ a channelised information <u>from said router port</u>~~comprising 20 data from one or more of said plurality of broadcast channels indicating occurrences of diagnostic events on processing devices of said plurality of processing devices; and~~

performing a second mapping operation by programmably retrieving from said channelised information, diagnostic event data from selected ones of said plurality of broadcast channels; and

supplying said retrieved diagnostic event data to said associated processing device to facilitate triggering of a diagnostic process on said associated processing device in dependence upon said retrieved diagnostic event data.

26. (original) A method as claimed in claim 25, comprising the step of combining a plurality of diagnostic event signals from different ones of said plurality of processing devices asserted to a respective broadcast channel.

27. (currently amended) A method as claimed in claim 2526, wherein said combining step comprises a logical OR operation.

28. (currently amended) A method as claimed in claim 25 comprising the step of synchronisingsynchronising at least one of said received diagnostic event signal andrand said received channelised information to a local clock domain.

29. (original) A method as claimed in claim 25, wherein assertion of said received diagnostic event signal is held pending acknowledgement of its receipt.

30. (original) A method claim 25, comprising the step of acknowledging receipt of said diagnostic event signal to said associated processing device.

31. (original) A method as claimed in claim 25, comprising the step of registering acknowledgement of receipt of said channelised information.

32. (original) An method as claimed in claim 25, comprising the step of monitoring both a first handshake signal sequence comprising receipt and acknowledgement of said channelised information and a second handshake signal sequence comprising receipt and acknowledgement

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of said diagnostic event signal and also outputting a single off-chip signal representing said first

handshake signal sequence and a single off-chip signal representing said second handshake

signal sequence.

33. (original) A method as claimed in claim 25, comprising the step of performing glitch-

removal by registering receipt of said diagnostic event signal prior to supplying said diagnostic

event signal as input to said first mapping operation thereby preventing false signalling of the

occurrence of a diagnostic event.

34. (original) A method as claimed in claim 25, comprising the step of synchronising a

signal received from said router output port to a clock domain of said associated processing

device prior to supplying said retrieved diagnostic event data to said associated processing

device.

35. (original) A method as claimed in claim 25, wherein said first mapping operation and

said second mapping operation are performed using a plurality of configuration registers

operable to effect said progammable assertion of said diagnostic event signal to said plurality of

said broadcast channels and/or to effect said progammable retrieval of said diagnostic event data

from selected ones of said plurality of broadcast channels.

36. (original) An apparatus as claimed in claim 35, wherein in said step of performing a

first mapping operation and said step of performing a second mapping operation, said

configuration registers are programmed using memory mapped access.

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37. (original) An apparatus as claimed in claim 35, wherein in said step of performing a first mapping operation and said step of performing a second mapping operation, said configuration registers are said configuration registers are programmed using JTAG scan access.

38. (original) An apparatus as claimed in claim 27, wherein in said step of performing a first mapping operation and said step of performing a second mapping operation a first subset of said configuration registers are programmable using JTAG scan access as well as memory mapped access and a second subset of said configuration registers are programmable using memory mapped access.

39. (original) A method as claimed in claim 25, comprising the step of generating an application trigger signal simulating the occurrence of a diagnostic event on at least one of said broadcast channels.

40. (original) A method as claimed in claim 25, comprising the step of programmably asserting said application trigger to one or more of said broadcast channels.

41. (original) A method as claimed in claim 25, in which said generated application trigger signal includes channel mapping information.

42. (original) A method as claimed in claim 25, wherein at least one of said plurality of processing devices is a processor core.

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43. (original) A method as claimed in claim 25, wherein at least one of said plurality of processing devices is a co-processor.

44. (original) A method as claimed in claim 25, wherein at least one of said plurality of processing devices is a digital signal processor.

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